WHAT IS CLAIMED IS:

1. An optical recording method of recording information on an optical recording medium, comprising the steps of:

(a) recording a first test pattern in a first track on the optical recording medium under such a predetermined recording condition to form a wider recording mark than the first track;

(b) after the recording of the first test pattern, recording a second test pattern in an area, of a second track, which is adjacent to a recording area of the first test pattern under a plurality of recording conditions, the second track being adjacent to the first track;

(c) reading the first track to detect a first read-out signal according to each of the plurality of recording conditions;

(d) reading the second track to detect a second read-out signal according to each of the plurality of recording conditions;

(e) determining an optimum recording condition for the second track from the plurality of recording conditions and the first and second read-out signals; and

(f) recording information in the second track under the optimum recording condition.

2. The optical recording method as defined in claim 1, wherein:

an amplitude of the first read-out signal is detected in step (c);

an amplitude of the second read-out signal is detected in step (d); and

the optimum recording condition is determined in step (e) based on the plurality of recording conditions and the amplitudes of the first and second read-out signals

3. The optical recording method as defined in claim 1, wherein:

a jitter of the first read-out signal detected in step (c);

a jitter of the second read-out signal detected in step (d); and

the optimum recording condition is determined in step (e) based on the plurality of recording conditions and the jitters of the first and second read-out signals

4. The optical recording method as defined in claim 1, wherein:

an error rate of the first read-out signal detected in step (c);

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an error rate of the second read-out signal detected in step (d); and

the optimum recording condition is determined in step (e) based on the plurality of recording conditions and the error rates of the first and second read-out signals

5. The optical recording method as defined in claim 1, wherein:

if the first read-out signal does not attain a predetermined state in step (e), a second recording condition is obtained under which the second read-out signal attains a predetermined state, and a calculation is performed on the second recording condition, so as to obtain a recording condition under which a wider recording mark is formed than under the second recording condition and designate this recording condition as an optimum recording condition.

6. The optical recording method as defined in claim 1, wherein:

it is evaluated in step (e) whether an amplitude of the first read-out signal has reached a predetermined threshold value;

if the amplitude of the first read-out signal has

reached the threshold value, an optimum recording condition is determined based on the plurality of recording conditions and the amplitudes of the first and second read-out signals; and

if the amplitude of the first read-out signal has not reached the threshold value, a second recording condition is obtained under which an amplitude of the second read-out signal reaches a predetermined value, and a calculation is performed on the second recording condition, so as to obtain a recording condition under which a wider recording mark is formed than under the second recording condition and designate this recording condition as an optimum recording condition

7. An optical recording method of recording information on an optical recording medium, comprising the steps of:

(a) recording a first test pattern in a first track on the optical recording medium under such a predetermined recording condition to form a wider recording mark than the first track;

(b) after the recording of the first test pattern, recording a second test pattern in an area, of a second track, which is adjacent to a recording area of the first test pattern under a plurality of recording conditions, the second track being adjacent to the first track;

(c) reading the second track to detect a second read-out signal according to each of the plurality of recording conditions;

(d) obtaining a second recording condition under which the second read-out signal attains a predetermined state and performing a calculation on the second recording condition, so as to obtain a recording condition under which a wider recording mark is formed than under the second recording condition and designate this recording condition as an optimum recording condition; and

(e) recording information in the second track under the optimum recording condition.

8. The optical recording method as defined in claim 7, wherein:

an amplitude of the second read-out signal is detected in step (c); and

a recording condition under which the amplitude of the second read-out signal reaches a predetermined value is obtained in step (d) as a second recording condition.

9. The optical recording method as defined in claim 7, wherein:

a jitter of the second read-out signal detected in

step (c); and

a recording condition under which the jitter of the second read-out signal reaches a predetermined value is obtained in step (d) as a second recording condition.

10. The optical recording method as defined in claim 7, wherein

an error rate of the second read-out signal detected in step (c); and

a recording condition under which the error rate of the second read-out signal reaches a predetermined value is obtained in step (d) as a second recording condition.

11. An optical recording method of recording information on an optical recording medium, comprising the steps of:

(a) recording a first test pattern in a first track on the optical recording medium under such a predetermined recording condition to form a wider recording mark than the first track;

(b) after the recording of the first test pattern, recording a second test pattern in an area, of a second track, which is adjacent to a recording area of the first test pattern under a plurality of recording conditions, the second track being adjacent to the first track;

(c) reading the first track to detect a first read-

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out signal according to each of the plurality of recording conditions;

(d) obtaining a first recording condition under which the first read-out signal attains a predetermined state and performing a calculation on the first recording condition, so as to obtain a recording condition under which a narrower recording mark is formed than under the first recording condition and designate this recording condition as an optimum recording condition; and

(e) recording information in the second track under the optimum recording condition.

12. The optical recording method as defined in claim 11, wherein:

an amplitude of the first read-out signal is detected in step (c);

a recording condition under which the amplitude of the first read-out signal reaches a predetermined value is obtained in step (d) as a first recording condition.

13. The optical recording method as defined in claim 11, wherein:

a jitter of the first read-out signal detected in step (c); and

a recording condition under which the jitter of the

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first read-out signal reaches a predetermined value is obtained in step (d) as a first recording condition.

14. The optical recording method as defined in claim 11, wherein

an error rate of the first read-out signal detected in step (c); and

a recording condition under which the error rate of the first read-out signal reaches a predetermined value is obtained in step (d) as a first recording condition.

15. An optical recording device for recording information on an optical recording medium by at least projecting a light beam thereon, comprising:

recording means for recording a first test pattern in a first track on the optical recording medium under such a predetermined recording condition to form a wider recording mark than the first track in determining a recording condition for a second track and also for recording, after the recording of the first test pattern, a second test pattern in an area, of a second track, which is adjacent to a recording area of the first test pattern under a plurality of recording conditions, the second track being adjacent to the first track;

read-out means for reading the first track to detect

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a first read-out signal according to each of the plurality of recording conditions and also for reading the second track to detect a second read-out signal according to each of the plurality of recording conditions; and

optimum recording condition determining means for determining an optimum recording condition for the second track from the plurality of recording conditions and the first and second read-out signals.

16. The optical recording device as defined in claim 15, wherein:

if the first read-out signal does not attain a predetermined state, the optimum recording condition determining means obtains a second recording condition under which the second read-out signal attains a predetermined state and perform a calculation on the second recording condition, so as to obtain a recording condition under which a wider recording mark is formed than under the second recording condition and designate this recording condition as an optimum recording condition.

17. The optical recording device as defined in claim 15, wherein:

the optimum recording condition determining means evaluates whether an amplitude of the first read-out signal has reached a predetermined threshold value;

if the amplitude of the first read-out signal has reached the threshold value, the optimum recording condition determining means determines an optimum recording condition based on the plurality of recording conditions and the amplitudes of the first and second read-out signals; and

if the amplitude of the first read-out signal has not reached the threshold value, the optimum recording condition determining means obtains a second recording condition under which an amplitude of the second read-out signal reaches a predetermined value and performs a calculation on the second recording condition, so as to obtain a recording condition under which a wider recording mark is formed than under the second recording condition and designate this recording condition as an optimum recording condition.

18. The optical recording device as defined in claim 15, further comprising:

normalizing means for normalizing at least either one of quantities derived from the first and second read-

out signals by the read-out means, so as to correct a difference in sensitivity between individual tracks.

19. The optical recording device as defined in claim 15, further comprising:

normalizing means for normalizing at least either one of signal quantities derived from the first and second read-out signals by the read-out means using a maximum values of amplitudes of the first and second read-out signals.

20. The optical recording device as defined in claim 15, further comprising:

circumferential variation normalizing means for normalizing at least either one of quantities derived from the first and second read-out signals by the read-out means, so as to correct a variation in a circumferential direction.

21. The optical recording device as defined in claim 15, wherein:

the second test pattern recorded by the recording means is constituted by a reverse pattern of the first test pattern.

22. The optical recording device as defined in claim 15, wherein:

the first and second test patterns are constituted by a combined pattern of marks and empty spaces, the marks and empty spaces being longer than 2T (T: channel bit length), and

the optical recording device further comprising:

displacement correction means for correcting recording positions of the first and second test patterns recorded by the recording means so that marks are aligned to marks or empty spaces along the direction perpendicular to the tracks.

23. The optical recording device as defined in claim 22, wherein:

the recording means records a third test pattern in the second track before recording the second test pattern; and

the displacement correction means corrects recording positions of the first and third test patterns so that marks are aligned to marks or empty spaces along the direction perpendicular to the tracks.

24. The optical recording device as defined in claim 23, wherein:

the third test pattern is identical to the first test pattern.

25. The optical recording device as defined in claim 15, wherein:

the first and second test patterns are constituted by a combined pattern of marks and empty spaces, the marks and empty spaces being longer than $(2+L)\cdot T$, where T is a channel bit length and L is a channel bit value required to prevent the recording means from being adversely affected by displacement of a recording bit when a recording condition is such that the second test pattern can be recorded.

26. The optical recording device as defined in claim 15, wherein:

the first track is formed in either one of a land or a groove; and

the second track is formed in the other.

27. The optical recording device as defined in claim 15, wherein:

the read-out means detects amplitudes of the first and second read-out signals; and

the optimum recording condition determining means

determines the optimum recording condition based on the plurality of recording conditions and the amplitudes of the first and second read-out signals.

28. The optical recording device as defined in claim 15, wherein:

the read-out means detects jitters of the first and second read-out signals; and

the optimum recording condition determining means determines the optimum recording condition based on the plurality of recording conditions and the jitters of the first and second read-out signals.

29. The optical recording device as defined in claim 15, wherein:

the read-out means detects error rates of the first and second read-out signals; and

the optimum recording condition determining means determines the optimum recording condition based on the plurality of recording conditions and the error rates of the first and second read-out signals.

30. An optical recording device for recording information on an optical recording medium by at least projecting a light beam thereon, comprising:

recording means for recording a first test pattern in a first track on the optical recording medium under such a predetermined recording condition to form a wider recording mark than the first track in determining a recording condition for a second track and also for recording, after the recording of the first test pattern, a second test pattern in an area, of a second track, which is adjacent to a recording area of the first test pattern under a plurality of recording conditions, the second track being adjacent to the first track;

read-out means for reading the second track to detect a second read-out signal according to each of the plurality of recording conditions; and

optimum recording condition determining means for obtaining a second recording condition under which the second read-out signal attains a predetermined state and performing a calculation on the second recording condition, so as to obtain a recording condition under which a wider recording mark is formed than under the second recording condition and designate this recording condition as an optimum recording condition.

31. The optical recording device as defined in claim 30, wherein:

the read-out means detects an amplitude of the

second read-out signal; and

the optimum recording condition determining means obtains a recording condition under which an amplitude of the second read-out signal reaches a predetermined value as a second recording condition.

32. The optical recording device as defined in claim 30, further comprising:

normalizing means for normalizing a quantity derived from the second read-out signal by the read-out means, so as to correct a difference in sensitivity between individual tracks.

33. The optical recording device as defined in claim 31, further comprising:

normalizing means for normalizing a signal quantity derived from the second read-out signal by the read-out means using a maximum value of an amplitude of the second read-out signal.

34. The optical recording device as defined in claim 30, further comprising:

circumferential variation normalizing means for normalizing a quantity derived from the second read-out signal by the read-out means, so as to correct a

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variation in a circumferential direction.

35. The optical recording device as defined in claim 31, further comprising:

circumferential variation normalizing means for causing the read-out means to read the first track and detect a circumferential variation normalization signal after the recording means has recorded the first test pattern and before the recording means records the second test pattern and for normalizing at least either one of amplitudes of the first and second read-out signals using an amplitude of the circumferential variation normalization signal.

36. The optical recording device as defined in claim 30, wherein:

the second test pattern recorded by the recording means is constituted by a reverse pattern of the first test pattern.

37. The optical recording device as defined in claim 31, further comprising

circumferential variation normalizing means for causing the recording means to record a third test pattern before the recording means records the second

test pattern, for causing the read-out means to read at least either one of the first and second tracks and to detect a circumferential variation normalization signal before the recording means records the second test pattern, and for normalizing at least either one of the amplitudes of the first and second read-out signals using an amplitude of the circumferential variation normalization signal.

38. The optical recording device as defined in claim 37, wherein:

the third test pattern is identical to the first test pattern.

39. The optical recording device as defined in claim 30, wherein:

the first and second test patterns are constituted by a combined pattern of marks and empty spaces, the marks and empty spaces being longer than 2T (T: channel bit length); and

the optical recording device further comprising:

displacement correction means for correcting recording positions of the first and second test patterns recorded by the recording means so that marks are aligned to marks or empty spaces along the direction

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perpendicular to the tracks.

40. The optical recording device as defined in claim 39, wherein:

the recording means records a third test pattern in the second track before recording the second test pattern; and

the displacement correction means corrects recording positions of the first and third test patterns so that marks are aligned to marks or empty spaces along the direction perpendicular to the tracks.

41. The optical recording device as defined in claim 40, wherein:

the third test pattern is identical to the first test pattern.

42. The optical recording device as defined in claim 30, wherein:

the first and second test patterns are constituted by a combined pattern of marks and empty spaces, the marks and empty spaces being longer than $(2+L)\cdot T$, where T is a channel bit length and L is a channel bit value required to prevent the recording means from being adversely affected by displacement of a recording bit

when a recording condition is such that the second test pattern can be recorded.

43. The optical recording device as defined in claim 30, wherein:

the first track is formed in either one of a land or a groove; and

the second track is formed in the other.

44. The optical recording device as defined in claim 30, wherein:

the read-out means detects a jitter of the second read-out signal; and

the optimum recording condition determining means obtains a recording condition under which the jitter of the second read-out signal reaches a predetermined value as a second recording condition

45. The optical recording device as defined in claim 30, wherein:

the read-out means detects an error rate of the second read-out signal; and

the optimum recording condition determining means obtains a recording condition under which the error rate of the second read-out signal reaches a predetermined

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value as a second recording condition

46. An optical recording device for recording information on an optical recording medium by at least projecting a light beam thereon, comprising:

recording means for recording a first test pattern in a first track on the optical recording medium under such a predetermined recording condition to form a wider recording mark than the first track in determining a recording condition for a second track and also for recording, after the recording of the first test pattern, a second test pattern in an area, of a second track, which is adjacent to a recording area of the first test pattern under a plurality of recording conditions, the second track being adjacent to the first track;

read-out means for reading the first track to detect a first read-out signal according to each of the plurality of recording conditions; and

optimum recording condition determining means for obtaining a first recording condition under which the first read-out signal attains a predetermined state and performing a calculation on the first recording condition, so as to obtain a recording condition under which a narrower recording mark is formed than under the first recording condition and designate this recording

condition as an optimum recording condition.

47. The optical recording device as defined in claim 46, wherein:

the read-out means detects an amplitude of the first read-out signal; and

the optimum recording condition determining means obtains a recording condition under which the amplitude of the first read-out signal reaches a predetermined value as a first recording condition.

48. The optical recording device as defined in claim 46, further comprising:

normalizing means for normalizing a quantity derived from the first read-out signal by the read-out means, so as to correct a difference in sensitivity between individual tracks.

49. The optical recording device as defined in claim 47, further comprising:

normalizing means for normalizing a signal quantity derived from the first read-out signal by the read-out means using a maximum value of an amplitude of the first read-out signal.

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50. The optical recording device as defined in claim 46, further comprising:

circumferential variation normalizing means for normalizing a quantity derived from the first read-out signal by the read-out means, so as to correct a variation in a circumferential direction.

51. The optical recording device as defined in claim 47, further comprising:

circumferential variation normalizing means for causing the read-out means to read the first track and detect a circumferential variation normalization signal after the recording means has recorded the first test pattern and before the recording means records the second test pattern and for normalizing at least either one of amplitudes of the first and second read-out signals using an amplitude of the circumferential variation normalization signal.

52. The optical recording device as defined in claim 46, wherein:

the second test pattern recorded by the recording means is constituted by a reverse pattern of the first test pattern.

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53. The optical recording device as defined in claim 47, further comprising:

circumferential variation normalizing means for causing the recording means to record a third test pattern before the recording means records the second test pattern, for causing the read-out means to read at least either one of the first and second tracks and to detect a circumferential variation normalization signal before the recording means records the second test pattern, and for normalizing at least either one of the amplitudes of the first and second read-out signals using an amplitude of the circumferential variation normalization signal.

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54. The optical recording device as defined in claim 53, wherein:

the third test pattern is identical to the first test pattern.

55. The optical recording device as defined in claim 46, wherein:

the first and second test patterns are constituted by a combined pattern of marks and empty spaces, the marks and empty spaces being longer than 2T (T: channel bit length); and

the optical recording device further comprising:

displacement correction means for correcting recording positions of the first and second test patterns recorded by the recording means so that marks are aligned to marks or empty spaces along the direction perpendicular to the tracks.

56. The optical recording device as defined in claim 55, wherein:

the recording means records a third test pattern in the second track before recording the second test pattern; and

the displacement correction means corrects recording positions of the first and third test patterns so that marks are aligned to marks or empty spaces along the direction perpendicular to the tracks.

57. The optical recording device as defined in claim 56, wherein:

the third test pattern is identical to the first test pattern.

58. The optical recording device as defined in claim 46, wherein:

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the first and second test patterns are constituted by a combined pattern of marks and empty spaces, the marks and empty spaces being longer than $(2+L)\cdot T$, where T is a channel bit length and L is a channel bit value required to prevent the recording means from being adversely affected by displacement of a recording bit when a recording condition is such that the second test pattern can be recorded.

59. The optical recording device as defined in claim 46, wherein:

the first track is formed in either one of a land or a groove; and

the second track is formed in the other.

60. The optical recording device as defined in claim 46, wherein:

the read-out means detects a jitter of the first read-out signal; and

the optimum recording condition determining means obtains a recording condition under which the jitter of the first read-out signal reaches a predetermined value as a first recording condition

61. The optical recording device as defined in claim 46,

wherein:

the read-out means detects an error rate of the first read-out signal; and

the optimum recording condition determining means obtains a recording condition under which the error rate of the first read-out signal reaches a predetermined value as a first recording condition.

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